Amendments t the Specificati n:

Please replace the paragraph beginning at page 1, line 15, with the following:

~~Concerning information equipment~~ It has become necessary in recent years, ~~there is a necessity~~ to transmit ~~a~~ high-speed signals in the order of GHz ~~or so~~ on a multilayer substrate. For ~~instance, there is~~ example, a multilayer printed circuit board ~~as a~~ is known in the prior art, which curbs voltage variation between a power supply and ~~a~~ ground. ~~and~~ Specifically, the known circuit board efficiently curbs malfunction of devices due to radiation of ~~an~~ unnecessary electromagnetic waves and intrusion of ~~an~~ external electromagnetic fields (refer to Japanese Patent Laid-Open No. 10-190237[[.]] ~~The~~ the disclosure of ~~the above document~~ which is incorporated herein by reference in its entirety.) ~~As for such~~ Such a multilayer substrate~~, there is~~ comprises an IVH (InnerVia Hole) substrate. While the IVH substrate has an advantage that it can form a via hole only between desired layers to effectively exploit the space, it has a drawback that it is time-consuming for production and expensive.

Please replace the paragraph beginning at page 2, line 5, with the following:

Thus, a glass epoxy resin is often used as a material for an inexpensive multilayer substrate. ~~To~~ In order to connect lines of a surface and an inner layer of the multilayer substrate using the glass epoxy resin as a material, the via hole penetrating the multilayer substrate is generally used. Fig. 16 shows an appearance of a via hole 1003 penetrating such a multilayer substrate 1001 formed on the multilayer substrate 1001. The inside of the via hole 1003 is covered with a conductive layer (not shown). ~~A s~~Surface wiring 1002 is mounted on the surface on the upper side of the multilayer substrate 1001 shown in Fig. 16~~, and a~~. A part of the surface wiring 1002 is connected to ~~an~~ one end 1006 ~~which is one end~~ of the via hole 1003. ~~An i~~Inner layer wiring 1004 is mounted between the layers inside the multilayer substrate 1001, and is connected to a connection point 1008 which is a portion other than the upper and lower ends of the conductive portion of the via hole 1003. ~~And n~~Nothing is connected to the portion from the connection point 1008 to an end 1007 opposed to an end 1006 of the conductive portion of the via hole 1003.

Please replace the paragraph beginning at page 2, line 24, with the following:

However, ~~as to a structure in which~~ the via hole structure which ~~penetrating~~ penetrates through the lines on a surface to a rear surface of a multilayer substrate using ~~a~~ glass epoxy resin ~~is~~ formsed, an unnecessary end of the via hole. This defines ~~forms~~ a resonator, and a power loss occurs at a desired frequency due to resonation of this resonator.

Please replace the paragraph beginning at page 4, line 5, with the following:

An object of the present invention is to provide a printed circuit board, a buildup substrate and a method of manufacturing the printed circuit board capable of curbing [[a]] transmission loss thereof at the desired frequency in consideration of the problem.

Please replace the paragraph beginning at page 17, line 22, with the following:

Figs. 2(a)-2(c) are diagrams explaining the principle of operation of an open stub 10. Fig. 2(c) is a diagram showing an impedance on seeing an open end 11 side from each point in Fig. 2(b) at a signal of a predetermined wavelength λ. In the open stub 10, the impedance on seeing the open end 11 side from a point A distant by $\lambda/2$ from the open end 11 is substantially infinite (maximum). As shown in Fig. 2(a), voltage of the signal at the point A also becomes maximum. To be more specific, in the open stub 10, it is the same state as being open at the point A distant by $\lambda/2$ from the open end 11. It is also in the open state at a point distant by $n\lambda/2$ (n is a natural number of 2 or more) from the open end.

Please replace the paragraph beginning at page 19, line 6, with the following:

While the above was described by taking an example of the case where the second portion 5 of the via hole 3 and the current-carrying element 9 operate as the open stubs, there are also the thinkable cases where the second portion 5 of the via hole 3 and the current-carrying element 9 operate as short stubs. Figs. 4(a)-4(c) are diagrams explaining the principle of operation of a short stub 12. Fig. 4(c) is a diagram showing the impedance on seeing a short end 13 side from each point in Fig. 4(b) at the signal of the predetermined wavelength λ. For instance, at a point B distant by $\lambda/4$ from the short end 13, the impedance on seeing the short end 13 side from the point B

is substantially infinite (Fig. 4(c)). As shown in Fig. 4(a), the voltage of the signal at the point B becomes maximum. To be more specific, it is the same state as being open at the point distant by $\lambda/4$ from the short end 13 at the predetermined frequency ($1/\lambda$). It is also in the open state at the point distant by substantially $(2n - 1)/4$ (n is a natural number of 2 or more) from the short end 13 at the predetermined frequency.

Please replace the paragraph beginning at page 21, line 16, with the following:

It is also possible to constitute a part of the current-carrying element 9 by a via hole 30. In that case, it is possible to decrease the length of a portion placed on the rear surface of the printed circuit board of the current-carrying element 9 according to this embodiment. Fig. 6(a) shows the cross-section of the printed circuit board according to this embodiment in such a case, and Fig. 6(b) is a plan view from the rear surface thereof. If the electrical length of the current-carrying element 9 including the via hole 30 is L2, it is possible to reduce the wiring area for the current-carrying element 9 on the rear surface of the printed circuit board according to this embodiment while reducing the transmission loss as above. Figs. ~~6A and 6B~~6(a) and 6(b) show ~~the case of~~ one via hole 30. However, a portion of the current-carrying element 9 may be constituted by a plurality of via holes. In such a case, it is possible to further reduce the wiring area for the current-carrying element 9 on the rear surface of the printed circuit board according to this embodiment.

Please replace the paragraph beginning at page 25, line 5, with the following:

According to the above description, the current-carrying element 9 is connected to the ground electrode 14 if the current-carrying element 9 is the short stub type. However, the following ~~case~~ alternative is also ~~thinkable~~possible.

Please replace the paragraph beginning at page 25, line 9, with the following:

Fig. 10(a) shows an internal perspective view of a short-stub type printed circuit board in the case where a differential signal line is connected as the surface wiring to via holes 3a and 3b. Fig. 10(b) shows a plan view seeing the printed circuit board shown in Fig. 10(a) from the rear surface side thereof. Ends 6a and 6b of the via holes 3a and 3b have surface wirings 2a and 2b connected thereto, and have

differential signals inputted thereto via the surface wirings 2a and 2b. To be more specific, the differential signals are inputted to the surface wirings 2a and 2b so that a phase of the signal inputted to the surface wiring 2a and the phase of the signal inputted to the surface wiring 2b become mutually opposite. And it is constituted so that the total of the electrical length (L1) of second portions 5a and 5b of the via holes 3a and 3b and the electrical length (L2) of current-carrying elements 9a and 9b connected to ends 7a and 7b of the via holes 3a and 3b satisfy (Formula 2) respectively. And the current-carrying elements 9a and 9b are mutually shorted at a connection portion 20. If the differential signals are inputted to the printed circuit board of such configuration, the connection portion 20 is virtually grounded, and the second portion 5a and current-carrying element 9a and the second portion 5b and current-carrying element 9b become equivalent to the state of being connected to the ground electrode 14 so as to operate as the short stubs respectively. Therefore, according to the printed circuit board shown in Figs. 10(a)-10(b), it is possible, without separately requiring the ground electrode, to implement the short-stub type printed circuit board in a compact form.

Please replace the paragraph beginning at page 26, line 13, with the following:

In the example shown in Figs. 10(a)-10(b), the via hole 3a according to the present invention is corresponding to the via hole according to the present invention, the via holes 3b is corresponding as an example to another via hole according to the present invention, the surface wiring 2a is corresponding to one of the differential signal lines according to the present invention, the surface wiring 2b is corresponding as an example to the other differential signal line according to the present invention, the end 6a is corresponding to the first end according to the present invention, the end 6b is corresponding as an example to one end of another via hole according to the present invention, the end 7a is corresponding to the second end according to the present invention, the end 7b is corresponding as an example to the other end of another via hole according to the present invention, the current-carrying element 9a is corresponding to the current-carrying element according to the present invention, and the current-carrying element 9b is corresponding as an example to another current-carrying element according to the present invention.

Please replace the paragraph beginning at page 28, line 12, with the following:

Figs. 14(a)-14(b) shows a comparison between the case of using the current-carrying element 9 as the open stub and the case of using no current-carrying element 9. Fig. 14(a) shows a frequency characteristic of an attenuation of signal power conveyed from a surface wiring 1002 to an inner layer wiring 1004 on the printed circuit board of a past example shown in Fig. 16 in the case of using no current-carrying element 9. The attenuations of the desired frequencies at 5 GHz and 18 GHz are about 5.5 dB and 98 dB respectively. Fig. 14(b) shows the frequency characteristic of the attenuation in the case of using the current-carrying element 9 shown in Fig. 1. The attenuations of the desired frequencies at about 5 GHz and 18 GHz are about 3.2 dB and 18 dB, showing improvement in the attenuation.

Please replace the paragraph beginning at page 30, line 12, with the following:

Fig. 13(a) shows a plan view seeing the printed circuit board shown in Fig. 11 from the rear surface. Figs. 11 and ~~13A~~ 13(a) show the land pattern 22 in a circular shape, but it may be a sector as shown in Fig. 13(b) for instance. It may also be in any other shape such as a square. In that case, that is, if the land pattern 22 is in a sectorial shape for instance, the inner layer pattern 21 connected to the inner layer wiring 4 is also rendered sectorial. And the sectorial shape of the land pattern 22 on the rear surface and the sectorial shape of the inner layer pattern 21 are placed by sandwiching the part of the multilayer substrate 1 so as to face each other.

Please replace the paragraph beginning at page 32, line 17, with the following:

Figs. 15(a)-15(b) show[[s]] a comparison between the case of using a C-R series circuit and the case of using no C-R series circuit. Fig. 15(a) shows the frequency characteristic of the attenuation of signal power conveyed from the surface wiring 1002 to the inner layer wiring 1004 on the printed circuit board of the past example shown in Fig. 16. The attenuation at the desired frequencies of about 18 GHz is about 98 dB. Fig. 15(b) shows the frequency characteristic of the attenuation of the signal power conveyed from the surface wiring 2 to the inner layer wiring 4 in the case of connecting the series circuits of the chip resistor 23 and capacitor 24 in parallel between the connection point 8 and the end 7. The attenuation at the desired frequency of 18 GHz

is 23 dB, showing significant improvement in the attenuation.

Please replace the paragraph beginning at page 33, line 16, with the following:

It ~~was~~ has been described that the multilayer substrate 1 is ~~the~~ a glass epoxy substrate. However, it may be ~~constituted by~~ made of a material other than the glass epoxy substrate. For instance, the multilayer substrate 1 may be a ceramic substrate. In that case, the conductive part of the via hole 3 ~~should~~ would be formed by including the second portion 5 rather than forming only the first portion and connecting the current-carrying element 9 to the end 7 of the via hole so as to manufacture the printed circuit board more easily. Then, it is possible to obtain the same effect as described above.

Please replace the paragraph beginning at page 34, line 1, with the following:

The scope of the present invention also includes an electronic device having the printed circuit board according to the first or second embodiment and electronic components mounted on the surface of or inside the printed circuit board. In the above examples, the cases of about 5 GHz and 18 GHz are cited as the predetermined or desired frequencies of the present invention. However, they are just the examples and not indicating any limitation. For instance, they may be the frequencies used on a transmitter or a receiver and may also be the frequencies used on another electronic device. Even in such cases, it is possible to obtain the same effect.